Response of
Wisconsin Power and Light Company
to
The Public Service Commission of Wisconsin
Data Request No. 1.05

Docket Number:	05-CE-137
Date of Request:	January 29, 2009
Information Requested By:	Ken Detmer
Date Responded:	February 16, 2009
Author:	Jeffrey Knier
Author's Title:	Director, Clean Air Compliance Projects
Author's Telephone No.:	(608) 458-4866
Witness: (If other than Author)	

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p. 7 par. 3: With an economizer bypass how is unit startup affected? Will the minimum operating load change with or without this bypass?

Response:
There are no automatic controls associated with the SCR warm-up in the SCR control system. The SCR system and boiler warm-up are dictated by the boiler warm-up ramp rate, which is controlled by the boiler control system. Furthermore, it is expected that the warm-up ramp temperature limitations imposed by the boiler structure and pressure parts coincide with those imposed by the SCR steel structure.

During these start-up conditions, when the boiler and SCR system warm-up, the SCR economizer bypass duct dampers are in the open position. When the SCR inlet temperature and the SCR outlet temperature are both greater than the minimum catalyst temperature required for vaporized ammonia injection, the ammonia injection automatic control valve is permitted to be opened provided that other permissives are also met. As the boiler load and flue gas temperature increase, the economizer bypass dampers are gradually closed to maintain this minimum catalyst temperature at the SCR reactor inlet.

The use of the economizer bypass, which transports higher temperature flue gas upstream of the economizer and mixes it with flue gas entering the SCR reactor, allows the SCR process to remove NOx at lower boiler loads.